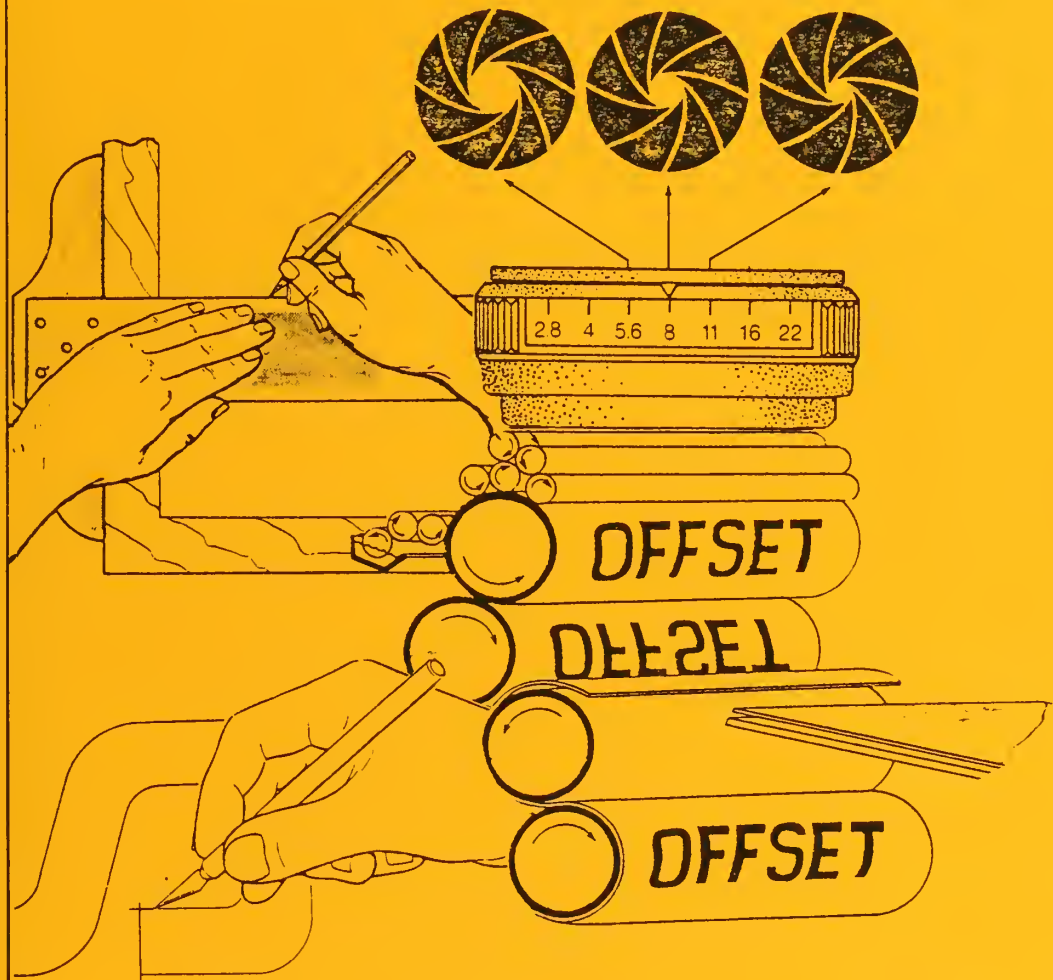


INDUSTRIAL EDUCATION 10-20-30

VISUAL COMMUNICATION



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INDUSTRIAL EDUCATION

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ACKNOWLEDGEMENTS

Alberta Education acknowledges with appreciation the contribution of the following Ad Hoc Committee members to the preparation of this guide.

INDUSTRIAL EDUCATION 10, 20, 30

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NOTE: This Curriculum Guide is a service publication only. The Senior High School Program of Studies contains the official statement concerning Senior High School courses. The information contained in the guide is prescriptive insofar as it duplicates that contained in the Program of Studies. There are in the Guide, however, as well as content, methods of developing the concepts, suggestions for the use of teaching aids and lists of additional reference books.

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NOTE:

Industrial Education 10, 20 and 30 is made up in four (4) packages according to career fields.

Teachers may select modules from a number of fields and consequently will need those packages that contain the content for the modules they plan to teach.

The packages are color-coded and contain the following career fields:

Electricity-Electronics	-	yellow
Materials	-	green
Power Technology	-	blue
Visual Communications	-	orange

The general modules of Research, Development and Production Science will be found in each package.

Study the content of the modules carefully and select those that best meet the needs of the students in the school, your own competencies and the availability of tools and equipment.

INTRODUCTION

The Industrial Education 10, 20, 30 series of courses is designed to provide exploration of, and orientation to, a wide variety of career options. These courses provide guidance to students to help them select more in-depth courses for occupational preparation or simply add to their technological "know-how".

Through the program, students are able to work in an environment which is conducive to challenging their intellect and developing their talents in a number of technical and craft areas. Students become aware of the interrelationship and the dependency of one technology upon the others. They have the opportunity to develop an understanding of the principles and skills required in the various occupations. Students will have many opportunities to apply academic skills learned in other subjects to their lab work.

RATIONALE

Industrial Education adds a new dimension to the program for educating young people at the secondary school level. For many students it will provide unique options to help prepare them for the life ahead while enjoying their current studies. The authors of the Industrial Education curriculum recognize that the needs of society have changed, and with them the approach to knowledge acquirement. Students today must be helped to discover how to learn, to conduct inquiry, to study independently, to make choices and decisions, to use technology, and to live with change.

The Industrial Education program is concerned with career development. Because careers today do not develop along predictable lines, our education program must provide considerable flexibility so that students have an option of several career choices. This is possible for several reasons. A person who has been broadly educated is able to learn what he needs to know, within limitations, about a new job. With the general education level of the society rising, the future worker needs broad as well as experience-based education. Such an education offers him/her subsequent chances for rapid and successful specialization. With this in mind the learning experiences should be such that they become the basis upon which specialization can be built.

Our task in the secondary school then, is to provide students not only with entry skills for several careers but to orient the program to meet social and cultural goals. This means that the various courses or disciplines must be interrelated. Industrial Education provides a unique opportunity for the teacher to demonstrate these relationships and further, to capitalize on them by means of the motivation created through practical applications. Thus the experiences to which students are exposed should provide them with realistic criteria for career guidance.

Industrial Education is a program consisting of courses that provide a continuum of experiences, starting with exploratory experiences and activities in the elementary and junior high school, expanding in the high school to the development of skills in career fields and culminating in on-the-job experience.

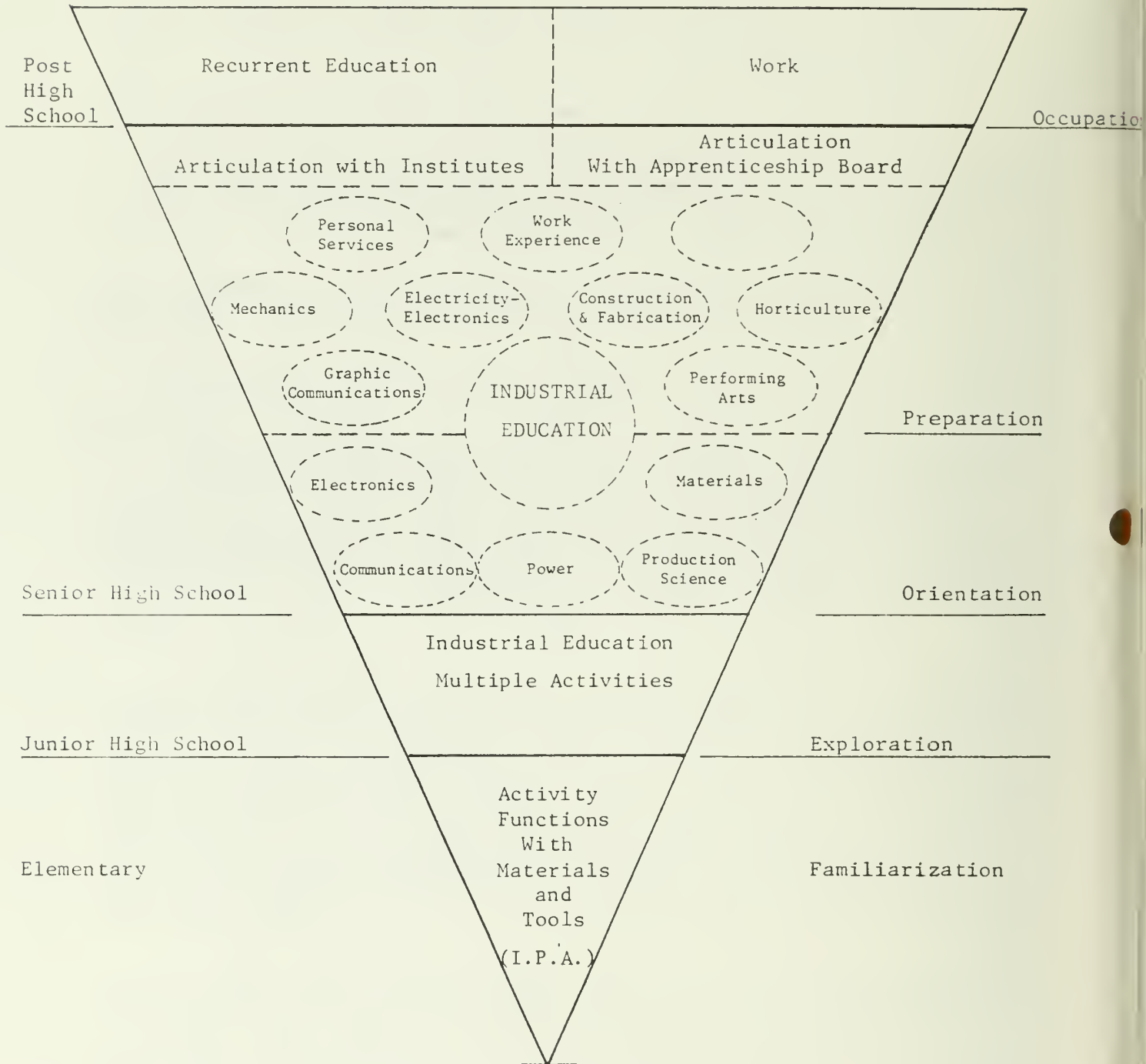
Industrial Education in the Junior High School, the exploratory phase of the continuum, provides the opportunity for the students to explore, reason, experiment and discover the reality of the technological society in which they live. The content of the program deals with industry, its organization, materials, processes, products, occupations, and the problems resulting from the impact of technology on society.

Following the exploratory phase, students may begin orientation studies in a career field. They may select modules of a more general nature in the Industrial Education 10, 20, 30 series or alternately take an introductory 12 course related directly to a career field. From here they advance to the more specific courses in the Industrial Education 22-32 program which prepare them for a career. The chart on the following page illustrates the Industrial Education Program in conceptual form, showing the advancement of a student from the awareness or familiarization stage to exploration, orientation, preparation and finally, an occupation. These courses provide in-depth experiences in the development of skills in tool and machine operation, material processes, drawing and interpretation and a knowledge of the basic concepts related to the technologies. All the courses place emphasis on practical work and applied theory.

ALBERTA INDUSTRIAL EDUCATION PROGRAM

FOR

CAREER CHOICE AND DEVELOPMENT



Legend: ————— Solid line indicates levels
 - - - - - Broken lines and open spaces indicate opportunity to transfer to other options

OBJECTIVES OF INDUSTRIAL EDUCATION

The Industrial Education Program can help achieve the Goals of Schooling and Education. The course objectives are more focused and give direction to the teacher.

The objectives of Industrial Education are classified in three areas with the following purposes:

Personal Growth:

To provide opportunities for the individual growth of the student through the development of acceptable personal and social values necessary in a productive society.

1. To provide a technical environment which motivates and stimulates individuals to discover their interests and develop personal and social responsibilities.
2. To assist in the development of positive attitudes toward safety.
3. To assist in the development of positive attitudes toward conservation and environment.
4. To assist in the development of consumer literacy.

Career Exploration:

To develop basic competencies, integrating cognitive and psychomotor skills to enter a family of occupations or post-secondary institutions for further education.

1. To provide exploratory experiences in the use of tools, equipment and materials appropriate to various technologies prevalent in a productive society.
2. To develop an understanding of the interrelationship of various technologies.
3. To provide a technical environment for students to synthesize their accumulated knowledge in the solution of practical problems.
4. To assist the student to develop habits that will be conducive to the establishment of a safe environment.

Occupational Skills:

To develop basic competencies, integrating cognitive and psychomotor skills to enter a family of occupations or post-secondary institutions for further education.

1. To provide safe exploratory experiences in the use of tools, energy, equipment and materials appropriate to various technologies prevalent in a productive society.
2. To develop an understanding of the intrrelationships of various technologies.
3. To provide a technical environment which permits students to synthesize their accumulated knowledge in the solution of practical problems, and to assist students to develop habits that will be conducive to the establishment of a safe environment.

ORGANIZATION

Program Organization:

The Industrial Education 10, 20, 30 courses consist of 56 modules of content. The modules are categorized into career fields. Four career fields, i.e. Graphic Communications, Electricity- Electronics, Materials, and Power Technology have the content of the modules outlined in this guide.

1. Regular Program

Courses may be created by arranging combinations of modules drawn from the fifty-six available modules. These should be selected carefully to meet the needs of the students while at the same time providing appropriate consideration to factors such as suitability of facilities, equipment availability, supply costs and teacher experience or training. Each course may be taught for 4 or 5 credits (100 - 125 hours). The content for each module may range from 25 - 33 hours. Four modules of 33 hours each would provide the necessary time for a five-credit course. Four 25-hour modules would meet the time requirements for a four-credit course. The selection and sequence of modules is left to the teacher's discretion.

Procedurally, students will register in a course made up of four modules. The first four modules taken by a student would normally be registered as Industrial Education 10A. The next four modules would become 20A and the third set of four modules would be 30A. If some students wished to enrol in further Industrial Education courses, the next course would become 10B, with 20B and 30B following. It would be possible for students to arrange different sequences of courses if it is thought advisable. For example, one sequence might be 10A, 10B, 20A, 30A, 30B; another might be 10A, 20A, 30A, 10B, etc. Sequencing of courses will be left to local authorities. Examples of courses are as follows:

IE 10A (4-5 credits)	IE 20A (4-5 credits)	IE 30A (5 credits)
IE 10B (4-5 credits)	IE 30A (4-5 credits)	IE 30B (5 credits)

2. Special Consideration

In schools where vocational courses are taught, teachers have the option of using content from the "12" courses to make up the 65 hours required as prerequisite to the "22" courses. That is, in a composite high school where unit shops are available, students could be scheduled into two shops for a total of 125 hours, e.g. Auto and Welding. They could then advance to a "22" course in either or both of the courses.

Students in the Industrial Education 10 program would be required to take two modules for 33 hours each, directly related to the "22" course for which they are earning the prerequisite. For example, a student would have entry to a "22" program by taking two closely related modules, plus two others:

e.g. Basic Woods (33 hrs.)	65 hrs. permit entry to
Building Construction (33 hrs.)	Building Construction 22
Architectural Drawing (33 hrs.)	
Basic Wiring (33 hrs.)	
Approximate Total 132 hrs. = 1 Industrial Education course	
(5 credits).	

Facility Organization

The organization of the physical facilities is in part determined by the original plan. There are, however, adjustments that can be made in the layout by the teacher to accommodate his/her style of teaching. The number of students in the class affects the way the lab or shop is organized. While most of the shops in Alberta are designed for 16 to 20 students, a number of factors must be considered in the final assignment of class load. These factors include:

1. physical size of the shop or laboratory
2. type of student
3. amount of equipment
4. type of programming
5. type of course
6. training and experience of the teacher.

Safety of the student and the opportunity to obtain teacher contact are important considerations when class loads are determined.

EVALUATION

Evaluation of student growth should be based on stated behavioural changes and specific criteria understood by the students. Allowance should be made for both self and teacher evaluation and, in some cases, peer evaluation. Evaluation should be based on the three domains of learning as follows:

Affective
(Personal Growth)

Cognitive
(Subject matter)

Psychomotor
(Product)

MODULE TITLES

The following are the titles of modules in the Industrial Education 10, 20, 30 course.

Electricity-Electronics (yellow package)

1. Basic Electricity and Electronics I
2. Basic Electronics II
3. Equipment Servicing
4. Logic Circuits
5. Computing Systems
6. Introduction to Computers
7. Computer Programming - Introductory

8. Computer Programming - Industrial Applications
9. Communications - Introductory
10. Communications - Systems
11. Electronic Design
12. Electronic Construction

Materials (green package)

1. General Woods
2. Building Construction (Frame)
3. Building Construction (Sub-Trades)
4. Cabinet Construction (Basic)
5. Cabinet Construction (Advanced)
6. General Metals
7. Sheet Metal
8. Machine Metal
9. Arc Welding
10. Oxy-Acetylene Welding
11. Foundry
12. Earths
13. Plastics
14. Textiles
15. Foods

Power Technology (blue package)

1. Conventional Heat Engines
2. Small Engine Repair
3. Small Engine Tune-Up and Troubleshooting
4. Mechanical Systems
5. Non-conventional Power Sources
6. Electrical and Electronic Systems
7. Electro Mechanical and Electronic Control
8. Appliance Repair and Troubleshooting
9. Automobile Maintenance
10. Fluid Power
11. Automobile Tune-up
12. Automobile Repair
13. Automobile Ownership

Visual Communications (orange package)

1. Introduction to Offset Lithography
2. Process Photography - Line
3. Process Photography - Halftone
4. Layout and Design
5. Topographical and Architectural Drafting
6. Relief Printing
7. Screen Process Printing
8. Black and White Photography - Basic
9. Black and White Photography - Advanced
10. Color Photography
11. Mechanical Drafting
12. Customer Service
13. Offset Printing Production

General

Three modules of a general nature also are available. These modules may be used by a student or group only once. These are:

1. Research module
2. Developmental module
3. Production Science module

INTRODUCTION TO VISUAL COMMUNICATIONS

Visual Communications includes a broad spectrum of activities ranging from sketching to printing an illustrated book. With communications playing such a dominant part in our lives it serves as a useful subject of study.

The thirteen modules that comprise the program provide a broad scope of content which allows the student and teacher considerable choice in building the type of course best suited to the situation. The modules listed may be taught in any order the teacher finds most appealing.

The major concepts addressed in Visual Communications are:

1. Image creation
2. Image generation
3. Image conversion
4. Reproduction
5. Finishing

In addition, the nine concepts common to the total program and which should be incorporated by the teacher in every module where appropriate are:

1. Consumer Awareness
 - quality
 - affective advertising
 - specifications
 - dollar value
 - buying procedures
 - availability
 - parts
 - serving
2. Environmental Implications
 - time element (past, present, future)
 - rates of consumption
 - conservation
 - alternatives
 - pollution (land, air, water, noise)
3. Graphic Interpretation
 - schematic
 - symbols
 - drawing interpretation
 - visuals
 - technical drawing and interpretation

4. Measurement

- British Engineering System (present English systems)
- System Internationale (SI)
- accuracy
- tools and instruments
- tolerances
- precision
- estimating
- approximating
- computations (including graphs, charts, interpolation)

5. Career Information

- benefits
- unionism
- local opportunities
- job mobility (vertical, horizontal, geographic)
- future
- retraining and upgrading
- jobs vs. careers

6. Societal Implications

- time (past, present, future)
- economic
- life patterns
- status
- values and mores

7. Technological Implications

- costs, benefits, consequences (C.B.C.)
- resource use and abuse
- tool development and use
- manufacturing
- servicing
- obsolescence
- design process
- planning

8. Safety

- unsafe conditions
- unsafe acts

9. Historical perspective

- the historical development of the discipline

COURSE CONTENT
VISUAL COMMUNICATIONS

INTRODUCTION

The modules as listed may be selected in the order that the teacher finds most appealing. Two modules taught for a total of 65 hours will serve as a prerequisite for the appropriate 22 courses in Drafting, Graphic Arts, or Visual Communications.

OBJECTIVES

The objectives of the modules in Visual Communications are:

1. To provide an opportunity for the student to learn about the materials and processes used in the graphics industry.
2. To give the student practice in the approved methods and procedures required for drafting, printing, photography and duplicating processes.
3. To acquaint the student with opportunities in the field of graphic communications.

LEARNING RESOURCES

- *Bocus, H. William, Advertising Graphics, Macmillan Canada, 2nd Ed. 1974.
- *Broekhuizen, Richard J., Graphic Communications, McKnight Publishers, Latest Edition.
- *Cogoli, John E., Photo Offset Fundamentals, Van Nostrand Reinhold Ltd. 1973.
- *Jensen, C.H. Architectural Drawing and Design, McGraw-Hill Ryerson, 1982.
- *Muse, Ken, Photo Two, Prentice Hall Inc., 1977.
- Stirling, N. Introduction to Technical Drawing, Metric Edition, Gage Publishing Co., 1977.
- Kodak Color Data Guide, Eastman Kodak, 1980.
- Kodak 101 Experiments in Photography, Eastman Kodak.

*Refers to prescribed resources.

MODULE ONE

INTRODUCTION TO OFFSET LITHOGRAPHY

INTRODUCTION

This module on lithography is designed to introduce the basic principles of the lithographic process including simple layouts, image conversion through the use of electrostatic and direct image masters, the basic steps to offset press operation and elementary bindery processes.

OBJECTIVES

The objectives of the Offset Lithography module are to:

1. Help the student learn how to create simple layouts and then, using the principles of offset lithography, produce a number of reproductions.
2. Teach the student safe procedures when working in the laboratory.

LEARNING RESOURCES

*Bockus, H. William, Advertising Graphics, (Second Edition)
Macmillan of Canada, 1974.

*Broekhuizen, Richard J., Graphic Communications, McKnight Publishers,
Latest Edition.

*Cogoli, John E. Photo Offset Fundamentals, Van Nostrand Reinhold,
1973.

Hird, K.F. Understanding Graphic Arts, Gage Publishing Co., 1982.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVOL

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>The student will:</p> <ol style="list-style-type: none"> 1. Safe Operation of Tools and Equipment 2. Unsafe Acts and Unsafe Conditions 3. Accident Reports 4. Compensation 5. First Aid 6. Safety Program 	<ul style="list-style-type: none"> - operate safely tools and equipment such as: <ul style="list-style-type: none"> - hand tools - power tools - offset equipment - binding equipment - fire extinguishers - discuss the hazards associated with: <ul style="list-style-type: none"> - inks - solvents and other flammables - use correct protective equipment and apparel at all times - explain the purpose and use of accident report forms and report all accidents - explain the function of and benefits available under the Workers' Compensation Act - attend to all minor injuries and practise minor first aid - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: OFFSET LITHOGRAPHY

IEVOL

GENERALIZATION: Images must be reproduced and disseminated through the use of rapid, accurate, economic and reliable production processes in order to meet the needs of a visually oriented society.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none"> - design 	<p>The student will:</p> <ul style="list-style-type: none"> - discuss and use principles of design, in product development, such as: <ul style="list-style-type: none"> - balance - proportion - sequence - unity - emphasis - discuss and use elements of design, in product development, such as: <ul style="list-style-type: none"> - line - shape - size - texture - tone - color - direction - discuss the factors which contribute to consumer appeal, such as: <ul style="list-style-type: none"> - presentation - format 		
<p>2. Image Generation:</p> <ul style="list-style-type: none"> - measurement 	<ul style="list-style-type: none"> - use the point system of measurement: <ul style="list-style-type: none"> - point - pica - em, en - agate 		

NOTES:

TOPIC 2: OFFSET LITHOGRAPHY (continued)

IEVOL

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - symbols - layout 	<ul style="list-style-type: none"> - use various symbols, such as: <ul style="list-style-type: none"> - adhesive symbols - hand lettering - clip art - art work - correctly use layout tools and materials, such as: <ul style="list-style-type: none"> - T-square - triangles - scissors - pencils - erasers - pens - markers - ruler - chalk and crayon - tempera - paste - masking tape - knives - other - use simple layout techniques to produce: <ul style="list-style-type: none"> - thumbnails - rough and dummy layouts - comprehensives - pasteups 		
3. Image Conversion	<ul style="list-style-type: none"> - correctly operate the available equipment to produce masters using: <ul style="list-style-type: none"> - electrostatic - diffusion transfer - direct image 		
4. Reproduction: <ul style="list-style-type: none"> - offset 	<ul style="list-style-type: none"> - set up the offset press with attention to: <ul style="list-style-type: none"> - fountain solution - master mounting 		

NOTES:

TOPIC 2: OFFSET LITHOGRAPHY (continued)

IEVOL

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
5. Finishing	<ul style="list-style-type: none"> - types of ink - wetting - impression - ink and moisture control - types of paper - paper feed control - use the offset press to produce good copy of the image on the master - clean up the offset press and attend to any required maintenance - discuss and use finishing techniques, such as: <ul style="list-style-type: none"> - collating - jogging - cutting - trimming - binding - padding - stitching - cerloxing - wire coil - drilling - folding - scoring - perforating - packaging - boxing - preserving - laminating - spraying - embossing 		

NOTES:

TOPIC 3: CAREERS

IEVOL

GENERALIZATION: To be able to make knowledgeable career decisions it is necessary to investigate many different occupations.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
1. Occupations	<p>The student will:</p> <ul style="list-style-type: none">- identify various occupations related to Visual Communications and list information according to the following headings:<ul style="list-style-type: none">- salaries- educational requirements- duties- working conditions- physical requirements		
2. Programs	<ul style="list-style-type: none">- identify the high school programs available in the related career fields- identify the post secondary programs available in the related career fields and determine the necessary qualifications for entry to specified programs		

NOTES:

MODULE TWO

PROCESS PHOTOGRAPHY - LINE

INTRODUCTION

This module on Line Photography is designed to introduce the operation of the vertical and horizontal process cameras, line photography and preparation of orthochromatic film to make metal masters on the platemaker.

It is suggested that the module, "Introduction to Offset Lithography" be taken prior to or concurrent with this module as a knowledge of simple layout techniques and offset press operation is essential.

OBJECTIVES

The objectives of the Process Photography - Line module are to:

1. Help the student learn the fundamentals of line photography.
2. Help the student develop skills in making metal plate masters.

LEARNING RESOURCES

*Cogoli, John E., Photo Offset Fundamentals, (Third Edition),
Van Nostrand Reinhold, 1973.

Kodak, Curriculum on Line Photography Eastman Kodak.

Kodak, Slides and Tapes on Line Photography Eastman Kodak.

Hird, K.F. Understanding Graphic Arts, Gage Publishing Co., 1982.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVPP

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>The student will:</p> <p>1. Safe Operation of Tools and Equipment</p> <p>2. Unsafe Acts and Unsafe Conditions</p> <p>3. Accident Reports</p> <p>4. Compensation</p> <p>5. First Aid</p> <p>6. Safety Program</p>	<p>- operate safely tools and equipment such as:</p> <ul style="list-style-type: none"> - hand tools - process camera - offset equipment - lighting equipment - platemaking equipment - fire extinguishers - binding equipment <p>- discuss the hazards associated with:</p> <ul style="list-style-type: none"> - solvents - photographic chemicals - photographic lights - fumes from platemaker <p>- use correct protective equipment and apparel at all times</p> <p>- explain the purpose and use of accident report forms and report all accidents</p> <p>- explain the function of and benefits available under the Workers' Compensation Act</p> <p>- attend to all minor injuries and practise minor first aid</p> <p>- participate in the prescribed safety program of the lab and/or school system</p>		

NOTES:

TOPIC 2: LINE PHOTOGRAPHY AND OFFSET REPRODUCTION

IEVPP

GENERALIZATION: Photography may be combined with other processes to reproduce and disseminate information rapidly, accurately and economically.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none"> - design 	<p>The student will:</p> <ul style="list-style-type: none"> - use principles and elements of design when preparing a product idea for line photography 		
<p>2. Image Generation:</p> <ul style="list-style-type: none"> - layouts 	<ul style="list-style-type: none"> - use tools and equipment, various materials and the point system of measurement to produce: <ul style="list-style-type: none"> - thumbnail sketches - working drawings - rough and dummy layouts - comprehensives - pasteups 		
<p>3. Image Conversion:</p> <ul style="list-style-type: none"> - photo mechanical - light sensitive materials 	<ul style="list-style-type: none"> - describe the use and operation of the process camera, with attention to: <ul style="list-style-type: none"> - parts of the camera - reduction and enlargement calculations - lighting - calibration - posterization - discuss the exposure and processing techniques for light sensitive materials, such as: <ul style="list-style-type: none"> - orthochromatic film - PMT's - 3M color separations 		

NOTES:

TOPIC 2: OFFSET LITHOGRAPHY (continued)

IEVPP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - chemistry - preparation of flats - platemaking 	<ul style="list-style-type: none"> - discuss the preparation of the chemistry for the various light sensitive materials with attention to: <ul style="list-style-type: none"> - development times - life of chemicals - chemical strength - prepare flats for plates with attention to: <ul style="list-style-type: none"> - stripping technique - opaquing - use the prepared flat to make a plate with attention to: <ul style="list-style-type: none"> - exposure time - development 		
4. Reproduction:	- set up and run the offset to produce good copies of the prepared image on the plate		
- offset			
5. Finishing	<ul style="list-style-type: none"> - use the appropriate finishing process for the printed product, such as: <ul style="list-style-type: none"> - numbering - collating - jogging - cutting - trimming - binding - padding - stitching - cerloxing - wire coil - drilling - folding - scoring - perforating - packaging - boxing - preserving - laminating - spraying - embossing 		

MODULE THREE

PROCESS PHOTOGRAPHY - HALFTONE

INTRODUCTION

This module on Screened Photography is designed to further a student's knowledge of process camera operation, stripping and platemaking. The module on Process Photography - Line should be completed by the student prior to this module.

OBJECTIVES

The objectives of the Process Photography - Halftone module are to:

1. Help the student learn the fundamentals of densitometry in order to produce screened photographs.
2. Help the student learn how to compute exposure times.
3. Help the student learn the principles of color separation.
4. Help the student learn advanced flat preparation.

LEARNING RESOURCES

*Cogoli, John E., Photo Off-set Fundamentals, (Third Edition).
Van Nostrand Reinhold, 1973.

Kodak, Curriculum on Halftone Photography, Eastman Kodak.

Kodak, Pamphlet on Tri-mask Color Correction, Eastman Kodak.

Hird, K.F. Understanding Graphic Arts, Gage Publishing Co. 1982.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVHP

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
1. Safe Operation of Tools and Equipment	<p>The student will:</p> <ul style="list-style-type: none"> - operate safely tools and equipment such as: <ul style="list-style-type: none"> - hand tools - process camera - offset equipment - lighting equipment - platemaking equipment - fire extinguishers - binding equipment 		
2. Unsafe Acts and Unsafe Conditions	<ul style="list-style-type: none"> - discuss the hazards associated with: <ul style="list-style-type: none"> - solvents - photographic chemicals - photographic lights - fumes from the platemaker - use correct protective equipment and apparel at all times 		
3. Accident Reports	<ul style="list-style-type: none"> - explain the purpose and use of accident report forms and report all accidents 		
4. Compensation	<ul style="list-style-type: none"> - explain the function of and benefits available under the Workers' Compensation Act 		
5. First Aid	<ul style="list-style-type: none"> - attend to all minor injuries and practise minor first aid 		
6. Safety Program	<ul style="list-style-type: none"> - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: HALFTONE PHOTOGRAPHY AND OFFSET REPRODUCTION

IEVHP

GENERALIZATION: Photographs may be represented and reproduced using the offset on ordinary paper through the use of a screening technique on the process camera.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none">- design- layouts <p>2. Image Generation:</p> <ul style="list-style-type: none">- measurement <p>3. Image Conversion:</p> <ul style="list-style-type: none">- photo-mechanical	<p>The student will:</p> <ul style="list-style-type: none">- review the elements and principles of design- produce layouts which include samples of:<ul style="list-style-type: none">- photographs or screened effects and textures- color overlays- screened tints- blocks for photographs- artwork- color photographs- use the point system of measurement in the preparation of:<ul style="list-style-type: none">- thumbnail sketches- dummy layout- comprehensives- discuss the use and operation of the process camera with attention to:<ul style="list-style-type: none">- parts- lighting- scales- calibration of halftone- filtration for color separation		

NOTES:

TOPIC 2: HALFTONE PHOTOGRAPHY AND OFFSET REPRODUCTION
(continued)

IEVHP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - densitometry - screening - light sensitive materials - preparation of flats 	<ul style="list-style-type: none"> - discuss the use of the densitometer with attention to: <ul style="list-style-type: none"> - reflection readings - transmission readings - filtration for color separation readings - exposure calculations - discuss the use of contact screens in producing: <ul style="list-style-type: none"> - halftones - duotones - color separations - discuss the use of light sensitive materials with attention to: <ul style="list-style-type: none"> - orthochromatic film - panchromatic film - 3-M color key film - exposure - development - use the materials, processes and techniques discussed to produce: <ul style="list-style-type: none"> - halftones - duotones - color separations - use correct procedures for: <ul style="list-style-type: none"> - stripping - opaquing 		

NOTES:

TOPIC 2: HALFTONE PHOTOGRAPHY AND OFFSET REPRODUCTION
(continued)

IEVHP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - platemaking 	<ul style="list-style-type: none"> - use the platemaking equipment to expose the necessary plates for the offset 		
<p>4. Reproduction:</p> <ul style="list-style-type: none"> - offset 	<ul style="list-style-type: none"> - set up the offset press for reproduction of the masters with attention to: <ul style="list-style-type: none"> - plate registration - correct inks and paper 		
<ul style="list-style-type: none"> - clean up 	<ul style="list-style-type: none"> - clean up the press when run has been completed 		
<p>5. Finishing</p>	<ul style="list-style-type: none"> - use the finishing process appropriate for the particular product, such as: <ul style="list-style-type: none"> - numbering - collating - jogging - cutting - trimming - binding - padding - stitching - cerloxing - wire coil - drilling - folding - scoring - perforating - packaging - boxing - preserving - laminating - spraying - embossing 		

NOTES:

MODULE FOUR
LAYOUT AND DESIGN

INTRODUCTION

This module on Layout and Design will enhance the student's knowledge and skill in layout and commercial art techniques. Primary emphasis will be on the planning and construction of various layouts using a variety of tools and materials.

OBJECTIVES

The objectives of the Layout and Design module are to:

1. Help the student learn how to prepare various types of layouts, incorporating the principles of good design.
2. Develop skills in utilizing tools and materials effectively.
3. Provide the student with adequate knowledge so that he/she is able to select the most economical method of image transfer for a particular layout on the offset press.

LEARNING RESOURCES

*Bockus, H. William, JR, Advertising Graphics, Macmillan of Canada, 1974.

Maurello, S. Ralph, Commercial Art Techniques, Tudor.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVLD

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
1. Safe Operation of Tools and Equipment	<p>The student will:</p> <ul style="list-style-type: none"> - operate safely tools and equipment such as: <ul style="list-style-type: none"> - hand tools - power tools - offset equipment - lighting equipment - compressed air equipment - platemaking equipment - fire extinguishers 		
2. Unsafe Acts and Unsafe Conditions	<ul style="list-style-type: none"> - discuss the hazards associated with: <ul style="list-style-type: none"> - solvents - chemicals - use correct protective equipment and apparel at all times 		
3. Accident Reports	<ul style="list-style-type: none"> - explain the purpose and use of accident report forms and report all accidents 		
4. Compensation	<ul style="list-style-type: none"> - explain the function of and benefits available under the Workers' Compensation Act 		
5. First Aid	<ul style="list-style-type: none"> - attend to all minor injuries and practise minor first aid 		
6. Safety Program	<ul style="list-style-type: none"> - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: CREATIVE DESIGN, LAYOUT AND REPRODUCTION

IEVLD

GENERALIZATION: Conceptual ideas may be represented by visual symbols and duplicated quickly, accurately and economically using the offset process.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none"> - commercial art techniques - principles - elements - color 	<p>The student will:</p> <ul style="list-style-type: none"> - discuss and use the following basic drawing methods: <ul style="list-style-type: none"> - experimental - constructive - expressive - observe principles of design in projects, such as: <ul style="list-style-type: none"> - rhythm - harmony - proportion - sequence - unity - emphasis - use elements of design, in project development, such as: <ul style="list-style-type: none"> - line - direction - shape - size - value - texture - color - discuss the psychological effects of color on the consumer - discuss color theory - describe the color wheel 		

NOTES:

TOPIC 2: CREATIVE DESIGN, LAYOUT AND REPRODUCTION
(continued)

IEVLD

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - symbols - tools - materials 	<ul style="list-style-type: none"> - discuss the use of symbols and use: <ul style="list-style-type: none"> - lettering - different typestyles and sizes - proofreading symbols - identify and use the following tools: <ul style="list-style-type: none"> - drawing instruments - ruling pens - cutting knives - T squares - set square - line gauge - air brush - pens - pencils, reproducing and nonreproducing - waxers - composing machine - scissors - dusting brushes - identify and use printing and art materials, such as: <ul style="list-style-type: none"> - glues - adhesive and photographic headings - inks and washes - paints - border tapes - adhesive tints and textures - rubylith - mylar sheets - snopaque - show card board 		

NOTES:

TOPIC 2: CREATIVE DESIGN, LAYOUT AND REPRODUCTION
(continued)

IEVLD

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - layout - advertising ethics - measurement 	<ul style="list-style-type: none"> - describe basic layout styles, such as: <ul style="list-style-type: none"> - Mondrian - picture window - copy-heavy - frame - multipanel - silhouette - discuss which types of layout would be appropriate for: <ul style="list-style-type: none"> - newspaper advertisements - package design - customer jobs - corporate symbols - discuss the significance of the following: <ul style="list-style-type: none"> - code of ethics - advertising psychology - copyright - use the printer's system of measurement: <ul style="list-style-type: none"> - pica - em, en - agate 		
2. Image Generation	<ul style="list-style-type: none"> - use the tools, equipment and materials available to produce: <ul style="list-style-type: none"> - thumbnail sketches - dummy and rough layouts - comprehensives - pasteups 		
3. Image Conversion: - electrostatic	<ul style="list-style-type: none"> - discuss the process and use the available equipment to make electrostatic masters 		

NOTES:

TOPIC 2: CREATIVE DESIGN, LAYOUT AND REPRODUCTION
(continued)

IEVLD

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none">- diffusion transfer- photo mechanical <p>4. Reproduction</p> <p>5. Finishing</p>	<ul style="list-style-type: none">- discuss the process and use the available equipment to make diffusion transfer plates- discuss the process and use the available equipment to make photomechanical masters- set up the offset press and use it to duplicate the various masters- use the appropriate finishing process for the product completed		

NOTES:

MODULE FIVE
TOPOGRAPHICAL & ARCHITECTURAL DRAFTING

INTRODUCTION

This module is designed to introduce students to the elements of topographical and architectural drawing.

OBJECTIVES

The objective of the Topographical and Architectural Drafting module is to:

1. Provide opportunities and experiences that will enable the student to develop basic knowledge, understanding and appreciation of topographical and architectural drafting processes.

LEARNING RESOURCES

*Jensen, C.H. Architectural Drawing and Design for Residential Construction, McGraw-Hill Ryerson, 1982.

Sloane, R.C. and Montz, J.M. Elements of Topographic Drawing, McGraw-Hill Ryerson, 1943, 2nd edition.

French, T.E. and Vierck, C.J. Manual of Engineering Drawing for Students and Draftsman, McGraw-Hill Ryerson, 1972, 10th edition.

Giesecke, F.E. et al. Technical Drawing, Macmillan of Canada, 1967, 5th edition.

Hepler, D.E. and Wallach, P.I. Architecture Drafting and Design, McGraw-Hill Ryerson, 1971.

Jensen, C.H. Engineering Drawing and Design, McGraw-Hill Ryerson, 1968.

*Refers to prescribed resources.

TOPIC 1: TOPOGRAPHICAL DRAFTING

IEVTA

GENERALIZATION: Modern society depends on accurate interpretation and translation of geographic data into permanent scaled symbolic records of the features.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Surveying:</p> <ul style="list-style-type: none">- tools and equipment- photogrammetry- cartography- data collection	<p>The student will:</p> <ul style="list-style-type: none">- discuss how to read maps and identify features represented on the maps- identify and describe the use of:<ul style="list-style-type: none">- transit- steel tape- range pole- level rod- describe how to record survey data- discuss and practise reading air photographs- using a map grid of the same area transfer, from the photographs, topographical information- identify common map symbols and describe:<ul style="list-style-type: none">- line shading- hachures- contour lines- layer tinting- Mercator grids- collect data for a specified area and use the data to construct a map for the area		

NOTES:

TOPIC 2: ARCHITECTURAL DRAFTING

IEVTA

GENERALIZATION: Architectural drafting provides a means of representing conceptual ideas as visual symbols in a workable element from which a building may be constructed.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Generation:</p> <ul style="list-style-type: none">- drafting practices- planning:<ul style="list-style-type: none">- floor plans- elevations- orientations- presentation drawings	<p>The student will:</p> <ul style="list-style-type: none">- correctly execute lines, symbols, lettering notes, abbreviations and dimensions as dictated by standard architectural drafting practices- given the appropriate information:<ul style="list-style-type: none">- draw a floor plan- draw various elevations- considering physical and cultural features, draw a plot plan, in accordance with local by-laws- given his/her own preliminary studies draw the residence in perspective and add foreground, middle ground and background to give the residence an appropriate setting which will best represent his/her design		

NOTES:

TOPIC 2: ARCHITECTURAL DRAFTING (continued)

IEVTA

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
- perspective drawing	<ul style="list-style-type: none">- sketch objects in:<ul style="list-style-type: none">- 1 point perspective- 2 point perspective- 3 point perspectiveand use these in the 3 various horizon line positions- draw to scale in 1 point and 2 point perspective simple objects such as garages, etc.		

NOTES:

MODULE SIX
RELIEF PRINTING

INTRODUCTION

This module is designed to introduce the basic principles of relief printing, including measurement, symbols, tools and materials. Because relief printing equipment is very costly, much of the introduction to equipment and processes is theoretical. Class assignments are limited to such projects as hand-setting type, operation of small platen presses and sign presses and the flexography process of making rubber stamps. There is no attempt in setting up this course to simulate the state of the art in industry or in a vocational graphic arts course.

OBJECTIVES

The objective of the Relief Printing module is to:

1. Give the student a basic understanding of the relief printing process.

LEARNING RESOURCES

Polk, Ralph W., Basic Printing, Chas. A. Bennett Co. Inc.

TOPIC 1: SAFETY

IEVRP

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>The student will:</p> <ol style="list-style-type: none"> 1. Safe Operation of Tools and Equipment 2. Unsafe Acts and Unsafe Conditions 3. Accident Reports 4. Compensation 5. First Aid 6. Safety Program 	<ul style="list-style-type: none"> - use safely tools and equipment such as: <ul style="list-style-type: none"> - hand tools - presses - rubber stamp equipment - fire extinguishers - discuss the hazards associated with: <ul style="list-style-type: none"> - solvents - inks - cleaning agents - use correct protective equipment at all times, such as: <ul style="list-style-type: none"> - gloves - aprons - explain the purpose and use of accident report forms and report all accidents - explain the benefits available under the Workers' Compensation Act - attend to all minor injuries and practise minor first aid - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: RELIEF PRINTING

IEVRP

GENERALIZATION: Symbols and letters can be reproduced efficiently and accurately by using the relief printing process.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>The student will:</p> <p>1. Image Creation:</p> <ul style="list-style-type: none"> - measurement - metric system - type - furniture <p>2. Image Generation:</p> <ul style="list-style-type: none"> - layout techniques <p>(optional)</p>	<p>The student will:</p> <ul style="list-style-type: none"> - discuss the printers system of measurement and identify points and picas on a line gauge - convert measurements to metric equivalents - describe the main features of different type styles - describe the common furniture used in spacing and lock up - describe the processes which use hot type, such as: <ul style="list-style-type: none"> - Ludlow - linotype - explain common layout techniques for hot type - explain how cold type is used with attention to: <ul style="list-style-type: none"> - type setting - type organization (California Job Case) - composing stick - spacing - lock up - explain justification in relation to type setting 		

NOTES:

TOPIC 2: RELIEF PRINTING (continued)

IEVRP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>3. Image Conversion:</p> <ul style="list-style-type: none"> - flexography - photo engraving <p>4. Reproduction</p>	<ul style="list-style-type: none"> - explain where large wooden type and large metal type is used - discuss the flexography process and describe how to make a rubber stamp using the rubber stamp press - describe the use of the process camera in the photo engraving process - compose type, lock it in a chase, set up the platen press and run copies of the product, e.g. business card - type set a poster on a flat bed press (sign press) and run multiple copies - discuss the composition of inks and the appropriateness for different presses - discuss papers and the appropriateness for different jobs - use the rubber stamp press to make a mold for a prepared stamp (optional) 		

NOTES:

TOPIC 2: RELIEF PRINTING (continued)

IEVRP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
5. Finishing	<ul style="list-style-type: none">- use the appropriate finishing process for the products manufactured:- numbering- collating- jogging- cutting- trimming- book binding- padding- stitching- cerloxing- wire coil- drilling- folding- scoring- perforating- packaging- wrapping- boxing- preserving- laminating- spraying- embossing- mounting		

NOTES:

MODULE SEVEN
SCREEN PROCESS PRINTING

INTRODUCTION

This module is designed to introduce the student to screen process printing, including both hand cut and photographic methods, and construction of equipment.

OBJECTIVES

The objectives of the Screen Process Printing module are to:

1. Teach the student various screen process methods and techniques.
2. Expand the students' knowledge about the wide use of screen process printing in industry.

LEARNING RESOURCES

*Broekhuizen, Richard J. Graphic Communications,
McKnight Publishing Co.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVSP

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Safe Operation of Tools and Equipment</p> <p>2. Unsafe Acts and Unsafe Conditions</p> <p>3. Accident Reports</p> <p>4. Compensation</p> <p>5. First Aid</p> <p>6. Safety Program</p>	<p>The student will:</p> <ul style="list-style-type: none"> - use safely tools and equipment such as: <ul style="list-style-type: none"> - hand tools - lighting equipment - platemaking or screen exposure equipment - compressed air equipment - fire extinguishers - discuss the hazards associated with: <ul style="list-style-type: none"> - solvents - chemicals used in processing photographic stencils - inks - cleaning agents - use correct protective equipment at all times, such as: <ul style="list-style-type: none"> - gloves - aprons - explain the purpose and use of accident report forms and report all accidents - explain the benefits available under the Workers' Compensation Act - attend to all minor injuries and practise minor first aid - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: SCREEN PROCESS PRINTING

IEVSP

GENERALIZATION: Screen process printing is widely used in printing visual information on a multitude of materials.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none"> - planning <p>2. Image Generation</p> <ul style="list-style-type: none"> - layout <p>3. Image Conversion</p> <ul style="list-style-type: none"> - paper stencil - hand cut stencil 	<p>The student will:</p> <ul style="list-style-type: none"> - utilize the principles and elements of design in planning a project for screen process printing - prepare thumbnail sketches, artwork and comprehensives using available methods, tools and materials; designs to be suitable for posters, T-shirts, company logos, etc. - prepare working drawings for hand cut and photographic stencils - cut out paper stencils - cut out and remove image areas on stencil film - produce positives and negatives of image area - prepare an image idea photographically through a continuous tone print - fasten paper stencil to screen and mask non-printing areas - adhere stencil to screen and dry the screen - remove acetate backing 		

NOTES:

TOPIC 2: SCREEN PROCESS PRINTING (continued)

IEVSP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - indirect or direct emulsion film - positive/negative - sensitized coating <p>4. Reproduction:</p> <ul style="list-style-type: none"> - tools 	<ul style="list-style-type: none"> - block out all non-printing areas - expose indirect or direct emulsion film using an accepted method (lamps or arc burner) - develop and/or wash out printing areas - adhere indirect or direct emulsion, (where applicable) to screen and dry screen - remove clear acetate backing - block out non-printing areas - produce positive and/or negative of image idea - prepare screen and block out non-printing areas - coat a screen with sensitized chemical - expose the screen - wash out the screen - block out non-printing areas - make a silkscreen printing frame - stretch screen material over the frame and fasten securely onto the frame 		

NOTES:

TOPIC 2: SCREEN PROCESS PRINTING (continued)

IEVSP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
- printing	<ul style="list-style-type: none"> - degrease the screen and roughen to provide 'tooth' - assemble silk screening tools, such as: <ul style="list-style-type: none"> - squeegee - ink knife - select the necessary inks or mix ink to desired color - ensure that images are properly registered and print desired copies on materials, such as: <ul style="list-style-type: none"> - paper - card stock - fabric - plastic - other receptor medium - dry and cure prints (use heat if necessary) - clean up all tools and equipment using appropriate solvents 		
5. Finishing	<ul style="list-style-type: none"> - use the appropriate method to finish the products, such as: <ul style="list-style-type: none"> - trimming - mounting - packaging 		

NOTES:

MODULE EIGHT

BLACK AND WHITE PHOTOGRAPHY - BASIC

INTRODUCTION

This module on Black and White Photography will give students the opportunity to learn about different types of cameras, properties and development of light sensitive materials, and basic procedures in the operation of the enlarger. Emphasis will be placed on the quality of the finished print.

OBJECTIVES

The objectives of the Black and White Photography - Basic module are to:

1. Teach the student the correct use and operation of photographic equipment and materials.
2. Help the student learn the fundamentals of good composition.
3. Help the student develop the ability to present prints for display.

LEARNING RESOURCES

- *Muse, Ken Photo Two, Prentice Hall Inc., 1977.
- Davis, Phil Photography, 4th Ed. W.C. Brown, 1982.
- Craven, George Object and Image: Introduction to Photography, 2nd Edition, Prentice Hall Inc., 1982.
- Frair, J. and Ardoin, B. Effective Photography, Prentice Hall Inc., 1982.
- LaCour and Lathrop Photo Technology, American Technical Society.
- Swedlund, Charles Photography: A Handbook of History, Materials, and Processes, 2nd Edition, Holt, Rinehart and Winston, 1981.
- Upton, Barbara and John Photography: Adapted from the Life Library of Photography, 2nd Edition, Little Brown and Co. 1981.
- Kodak Black and White Darkroom Data Guide, Eastman Kodak.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVBW

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
	The student will:		
1. Safe Operation of Tools and Equipment	<ul style="list-style-type: none">- use safely tools and equipment such as:<ul style="list-style-type: none">- hand tools- photographic enlarger- lighting equipment		
2. Unsafe Acts and Unsafe Conditions	<ul style="list-style-type: none">- discuss the hazards associated with:<ul style="list-style-type: none">- photographic chemicals- photographic lights- use correct protective equipment and apparel at all times		
3. Accident Reports	<ul style="list-style-type: none">- explain the purpose and use of accident report forms and report all accidents		
4. Compensation	<ul style="list-style-type: none">- explain the function of and benefits available under the Workers' Compensation Act		
5. First Aid	<ul style="list-style-type: none">- attend to all minor injuries and practice minor first aid		
6. Safety Program	<ul style="list-style-type: none">- participate in the prescribed safety program of the lab and/or school system		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)

IEVBW

GENERALIZATION: The camera can be used skillfully in the capture of images which may be reproduced and distributed in a convenient and durable form.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none">- composition- types of photography	<p>The student will:</p> <ul style="list-style-type: none">- explain elements of photographic composition, such as:<ul style="list-style-type: none">- rule of thirds- balance (formal and informal)- harmony- rhythm- symmetry- proportion- simplicity- centre of interest- framing- pattern- texture- line- discuss the following categories of photographic images:<ul style="list-style-type: none">- portraiture- photojournalism- candids- still life- scenic- micro/macro- copying- industrial/commercial- artistic		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBW

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>2. Image Generation:</p> <ul style="list-style-type: none"> - tools - lenses - shutters - aperture - camera use - film structure 	<ul style="list-style-type: none"> - discuss the operation and indicate the path taken by light striking the film in the following cameras: <ul style="list-style-type: none"> - simple box - single lens reflex - twin lens reflex - range finder - view camera - define focal length using a diagram - discuss the use of different lenses and filtration on cameras - list the three major types of lenses and indicate how angle of view and depth perception is altered in each type - describe the types of shutters used on different cameras - explain aperture sizes for different f-stops - demonstrate handling techniques; such as: <ul style="list-style-type: none"> - film loading and unloading - use of light meter - changing of aperture size - adjusting shutter speeds - removal/attachment of lenses - focusing - explain the composition of a Black and White film 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBW

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - ISO/ASA - types of film - light metering 	<ul style="list-style-type: none"> - explain the relationship between film light sensitivity and the ISO/ASA scale - list the color sensitivity and safelight colors for each of the following films: <ul style="list-style-type: none"> - orthochromatic - panchromatic - B + W infrared - explain the difference between incident light metering and reflective light metering - demonstrate the correct use of light meters for both types of metering 		
<p>3. Image Conversion:</p> <ul style="list-style-type: none"> - chemicals 	<ul style="list-style-type: none"> - prepare chemicals for film and print processing - list correct sequence for using the chemicals in print and paper developing - describe how each chemical in the sequence effects the film emulsion 		
<ul style="list-style-type: none"> - processing time 	<ul style="list-style-type: none"> - demonstrate calculation of development time using processing guides and thermometer - list processing times for other chemicals 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVRW

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - film handling <p>4. Image Reproduction:</p> <ul style="list-style-type: none"> - tools - papers - contact printing - developing 	<ul style="list-style-type: none"> - demonstrate correct film handling techniques to prevent scratches, finger prints and other damage - list the tools and equipment required for contact printing and enlarging - demonstrate ability to make adjustments on enlarger - demonstrate ability to correctly use a contact printer - demonstrate ability to correctly use a timer with enlarger and printer - discuss the types of photographic papers available, their characteristics and composition with attention to: <ul style="list-style-type: none"> - polycontrast - grades - bromides - surface textures - finishes - light sensitivity - use available equipment to produce contact prints - use the correct sequence and observe correct processing time in print development 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBW

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - enlarging techniques 	<ul style="list-style-type: none"> - describe two methods used for cleaning negatives - demonstrate the correct technique for focusing and cropping unwanted areas - demonstrate one technique for establishing aperture size and exposure times - produce properly exposed and processed: <ul style="list-style-type: none"> - photograms - enlargements without filter - enlargements with filter 		
5. Finishing:	<ul style="list-style-type: none"> - discuss the process and demonstrate how to: <ul style="list-style-type: none"> - wash prints - dry, ferrotype, mat finish, RC paper 		
<ul style="list-style-type: none"> - spotting 	<ul style="list-style-type: none"> - demonstrate the use of spotting dye and spotting pencils to remove white spots on prints 		
<ul style="list-style-type: none"> - toners 	<ul style="list-style-type: none"> - using the same negative produce prints and immerse in the following toners: <ul style="list-style-type: none"> - blue, yellow, red, green - rapid selenium - sepia - poly toner - brown 		
<ul style="list-style-type: none"> - portfolio 	<ul style="list-style-type: none"> - prepare a portfolio of prints 		

NOTES:

MODULE NINE

BLACK AND WHITE PHOTOGRAPHY - ADVANCED

INTRODUCTION

The second module in Black and White photography provides a series of experiences using advanced equipment, camera and darkroom techniques. The emphasis will be placed on the introduction of more advanced concepts based on skills mastered in Black and White Photography - Basic.

OBJECTIVES

The objectives of the Black and White Photography - Advanced module are to:

1. Reinforce basic concepts and skills learned in the Black and White Photography - Basic module.
2. Introduce advanced techniques and at the same time stress quality control.
3. Help the student to refine the use of the element of composition.
4. Aid the student in the achievement of more complex photographic procedures and techniques.

LEARNING RESOURCES

- *Kodak, 101 Experiments in Photography, Eastman Kodak.
- *Muse, Ken Photo Two, Prentice Hall Inc., 1977.
- Davis, Phil. Photography, 4th Ed. W.C. Brown, 1982.
- Craven, George Object and Image: Introduction to Photography, 2nd Ed. Prentice Hall Inc., 1982.
- Frair, J. and Ardoin, B. Effective Photography, Prentice Hall Inc., 1982.
- Kodak, Black and White Darkroom Data Guide, Eastman Kodak, 1980.
- LaCour and Lathrop, Photo Technology, American Technical Society.
- Swedlund, Charles Photography: A Handbook of History, Materials, and Processes, 2nd Ed. Holt, Rinehart and Winston, 1981.
- Upton, B. and Upton, J. Photography: Adapted from the Life Library of Photography, 2nd Ed. Little Brown and Company, 1981.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVBWP

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
1. Safe Operation of Tools and Equipment	The student will: <ul style="list-style-type: none">- operate safety tools and equipment, such as:<ul style="list-style-type: none">- hand tools- photographic enlarger- lighting equipment		
2. Unsafe Acts and Unsafe Conditions	<ul style="list-style-type: none">- discuss the hazards associated with:<ul style="list-style-type: none">- photographic chemicals- photographic lights- use correct protective equipment and apparel at all times		
3. Accident Reports	<ul style="list-style-type: none">- explain the purpose and use of accident report forms and report all accidents		
4. Compensation	<ul style="list-style-type: none">- explain the function of and benefits under the Workers' Compensation Act		
5. First Aid	<ul style="list-style-type: none">- attend to all minor injuries and practice minor first aid		
6. Safety Program	<ul style="list-style-type: none">- participate in the prescribed safety program of the lab and/or school system		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)

IEVRWP

GENERALIZATION: The camera can be used skillfully in the capture of images which may be reproduced and distributed in a convenient and durable form.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none">- composition- photo story- lighting	<p>The student will:</p> <ul style="list-style-type: none">- explain elements of photographic composition, such as:<ul style="list-style-type: none">- rule of thirds- balance (formal and informal)- harmony- rhythm- symmetry- proportion- simplicity- centre of interest- framing- pattern- texture- line- contrast- light and color- compose a photo story of a complex idea- collect examples of lighting techniques which use:<ul style="list-style-type: none">- main/key- fill- background- highlights		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>2. Image Generation:</p> <ul style="list-style-type: none"> - tools - lenses 	<ul style="list-style-type: none"> - practice posing a subject using modeling studio lights or flash portrait lighting to demonstrate the following types of lighting: <ul style="list-style-type: none"> - broad - loop - Rembrandt - split - Paramount - profile - demonstrate camera handling abilities with attention to: <ul style="list-style-type: none"> - film loading/unloading - film advance - ISO/ASA indicator - light meter - aperture size - location of shutter - adjusting shutter speed - focal lengths of lenses - removal/attachment of lenses - shutter release - focusing techniques - depth of field scale/preview - proper camera handling techniques - infrared dot - flash synchronization terminals - demonstrate the ability to use a wide variety of lenses and attachments 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - shutters - aperture - electronic flash - light 	<ul style="list-style-type: none"> - explain what is meant by the term, focal length, when discussing lenses - use one or more lenses or attachments while demonstrating a knowledge of focus, depth of field and exposure techniques - demonstrate the proper use and an understanding of: <ul style="list-style-type: none"> - extension tubes - extension bellows - lenses coupled with teleconverters - zoom lenses - macro lens - supplementary diopter filters - demonstrate the ability to select a range of shutter speeds appropriate for subject movement, speed, direction and lenses - demonstrate the ability to select an aperture size appropriate for the subject and composition - use electronic flash in: <ul style="list-style-type: none"> - manual mode - automatic mode - sketch and label the electromagnetic spectrum, clearly indicating the zone of visible light 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - color - additive colors - subtractive colors - complementary colors - filtration - light sensitivity of films 	<ul style="list-style-type: none"> - draw a diagram of the major parts of the visible light spectrum showing adjoining areas - identify types of light sources, such as: <ul style="list-style-type: none"> - daylight - tungsten - list the additive colors, the types of light sources and the new colors formed in combination - list the subtractive colors, the type of light source and filters and the new colors formed in combination - demonstrate the ability to neutralize or enhance colors by using additive and subtractive colors - state the rules of absorption and transmission of colors through filters and use complementary colored filters to neutralize or enhance colors - discuss the magnified cross-section of a film - discuss the difference between films of various ISO/ASA ratings 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - color sensitivity of films - light meters - film latitude 	<ul style="list-style-type: none"> - demonstrate the ability to use a variety of different films and corresponding safelights with any of the following: <ul style="list-style-type: none"> - color blind print paper - ortho high contrast - panchromatic - B and W infrared - demonstrate the ability to use incident and reflective light meters in several different lighting situations - photograph a grey scale, a series of objects while varying the light intensity between highlight and shadow values on the object - process film, make prints and discuss the ability of the film to record the range of light and dark 		
<p>3. Image Conversion:</p> <ul style="list-style-type: none"> - chemistry 	<ul style="list-style-type: none"> - list the processing chemicals in exact order and note the processing temperatures of the chemicals for films and prints - demonstrate the correct preparation of chemicals for selected processes 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - times and temperatures - shelf - processing: <ul style="list-style-type: none"> - push - normal 4. Image Reproduction: <ul style="list-style-type: none"> - tools 	<ul style="list-style-type: none"> - calculate the appropriate times for the different chemicals taking into consideration: <ul style="list-style-type: none"> - temperature - number of previously processed films or prints - discuss shelf life and capacity rates of chemistry - calculate the first developer processing time for film which has been pushed to increase effective ISO/ASA - process film maintaining constant temperature and exact times - properly dry film and store negatives in envelopes - demonstrate the correct use of the following equipment to make good prints: <ul style="list-style-type: none"> - contact printer - enlarger - timer - grain focus finder - negative cleaner - safelights 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - film/paper 	<ul style="list-style-type: none"> - discuss the following when selecting print paper to meet the needs of the project: <ul style="list-style-type: none"> - types of exposing - types of processing - types of film support or base - print characteristics, such as: <ul style="list-style-type: none"> - tone - surface - contrast - thickness - color 		
<ul style="list-style-type: none"> - print exposure 	<ul style="list-style-type: none"> - use the following techniques to improve the quality of prints: <ul style="list-style-type: none"> - correct aperture and time - burning and dodging - vignetting - solarization/sabattier effect 		
<ul style="list-style-type: none"> - processing 	<ul style="list-style-type: none"> - use processing techniques, such as: <ul style="list-style-type: none"> - tray - tank - machine 		
5. Finishing:			
<ul style="list-style-type: none"> - print permanency 	<ul style="list-style-type: none"> - process all prints to assure extended life by using the appropriate techniques and chemistry 		

NOTES:

TOPIC 2: PHOTOGRAPHY (BLACK AND WHITE)
(continued)

IEVBWP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none">- enhancement- mounting	<ul style="list-style-type: none">- use enhancement techniques, such as:<ul style="list-style-type: none">- toners- reducers- use touch-up materials to repair prints, such as:<ul style="list-style-type: none">- spotting dyes- pencils and charcoal- lacquer		

NOTES:

MODULE TEN

COLOR PHOTOGRAPHY

INTRODUCTION

This module on Color Photography will introduce the student to color theory, processing color films, and prints and correct handling techniques for a variety of photographic equipment.

OBJECTIVES

The objectives of the Color Photography module are to:

1. Introduce the student to the visible light spectrum.
2. Introduce the student to the theory and practise of color film development.
3. Introduce the student to safe methods for processing color prints.

LEARNING RESOURCES

*Bailey, Adrian Color Photography, Random House Publishers.

Davis, Phil. Photography, 4th Ed. W.C. Brown, 1982.

Craven, George Object and Image: Introduction to Photography, 2nd Ed. Prentice Hall Inc., 1982.

Frair, J. and Ardoin, B. Effective Photography, Prentice Hall Inc., 1982.

Muse, Ken Photo Two, Prentice Hall Inc., 1977.

*Kodak Color Data Guide, Eastman Kodak, 1980.

Swedlund, Charles Photography: A Handbook of History, Materials, and Processes, 2nd Ed. Holt, Rinehart and Winston, 1981.

Upton, B. and Upton, J. Photography: Adapted from the Life Library of Photography, 2nd Ed. Little Brown and Company, 1981.

*Refers to prescribed resources.

TOPIC 1: SAFETY

IEVCP

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>The student will:</p> <ol style="list-style-type: none"> 1. Safe Operation of Tools and Equipment 2. Unsafe Acts and Unsafe Conditions 3. Accident Reports 4. Compensation 5. First Aid 6. Safety Program 	<ul style="list-style-type: none"> - operate safety tools and equipment, such as: <ul style="list-style-type: none"> - hand tools - photographic enlarger - lighting equipment - discuss the hazards associated with: <ul style="list-style-type: none"> - photographic chemicals - photographic lights - use correct protective equipment and apparel at all times - explain the purpose and use of accident report forms and report all accidents - explain the function of and benefits available under the Workers' Compensation Act - attend to all minor injuries and practice minor first aid - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR)

IEVCP

GENERALIZATION: The camera can be used skillfully in the capture of images in color which may be reproduced and distributed in a convenient and durable form.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none">- composition- lighting	<p>The student will:</p> <ul style="list-style-type: none">- use techniques of composition when exposing color slides and color negatives which create:<ul style="list-style-type: none">- mood- movement- dimension- compose a photo story- discuss how to match the color temperature of studio lights to the proper film and/or filters- discuss color range and the use of daylight and tungsten lighting- explain how to correctly use flash lighting with attention to:<ul style="list-style-type: none">- color range- manual mode- automatic mode- synchronization- bounce flash- red eye		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>2. Image Generation:</p> <p>- tools</p> <p>- lenses</p>	<ul style="list-style-type: none"> - practice posing a subject using modeling studio lights or flash portrait lighting to demonstrate the following types of lighting: <ul style="list-style-type: none"> - broad - loop - Rembrandt - split - Paramount - profile - demonstrate camera handling abilities with attention to: <ul style="list-style-type: none"> - film loading/unloading - film advance - ISO/ASA indicator - light meter - aperture size - location of shutter - adjusting shutter speed - focal lengths of lenses - removal/attachment of lenses - shutter release - focusing techniques - depth of field scale/preview - proper camera handling techniques - infrared dot - flash synchronization terminals - demonstrate the ability to use a wide variety of lenses and attachments 		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - slide copying - shutters - aperture - light 	<ul style="list-style-type: none"> - explain what is meant by the term, focal length, when discussing lenses - use one or more lenses or attachments while demonstrating a knowledge of focus, depth of field and exposure techniques - photograph a series of frames using color negative and color slide film - demonstrate the ability to copy slides using color slide film and corrected light source - demonstrate the ability to select a range of shutter speeds appropriate for subject movement, speed, direction and lenses - demonstrate the ability to select an aperture size appropriate for the subject and composition - sketch and label the electromagnetic spectrum, clearly indicating the zone of visible light - draw a diagram of the major parts of the visible light spectrum showing adjoining areas 		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - color - additive colors - subtractive colors - complementary colors - filtration - color correction 	<ul style="list-style-type: none"> - identify types of light sources, such as: <ul style="list-style-type: none"> - daylight - tungsten - discuss the temperature of different light sources and estimate the value in ° Kelvin - list the additive colors, the type of light source and filters and the new colors formed in combination - list the subtractive colors, the type of light source and filters and the new colors formed in combination - demonstrate the ability to neutralize or enhance colors by using additive and subtractive colors - state the rules of absorption and transmission of colors through filters and use complementary colored filters to neutralize or enhance colors - select the appropriate filter to match the light color source with the color sensitivity of film using the nomograph - use a color meter to measure the color temperature of light sources and calculate the appropriate filters 		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - films - color sensitivity - light sensitivity rating - push processing for slides - light meters 	<ul style="list-style-type: none"> - discuss the magnified cross-section of a color film stressing the emulsion or tripack arrangement - discuss the difference between color slide film and color negative film - demonstrate the ability to use color correction filters for film and varying light sources - demonstrate the ability to select the appropriate safe light for distance to film and time of exposure - demonstrate how different films of varying ISO/ASA change the clarity or resolution of image - demonstrate the ability to increase the ISO/ASA rating on a film and how to change the corresponding development time - list one advantage and one disadvantage of push processing - demonstrate the ability to use incident and reflective light meters in several different lighting situations 		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - film latitude - color permanency <p>3. Image Conversion:</p> <ul style="list-style-type: none"> - chemistry - times and temperature - shelf - processing: <ul style="list-style-type: none"> - push 	<ul style="list-style-type: none"> - demonstrate the ability of a film to capture a range of colors, hues and densities by exposing and developing a roll of slide film - list some techniques used to extend color permanency of slides, negatives and prints - list the processing chemicals in exact order and note the processing temperatures of the chemicals for the following processes: <ul style="list-style-type: none"> - E6 - C41 - K2 - demonstrate the correct preparation of chemicals for selected processes - calculate the appropriate times for the different chemicals taking into consideration: <ul style="list-style-type: none"> - temperature - number of previously processed films or prints - discuss shelf life and capacity rates of color chemistry - calculate the first developer processing time for color slide film which has been pushed to increase effective ISO/ASA 		

NOTES:

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>4. Image Reproduction:</p> <ul style="list-style-type: none"> - normal - film handling - tools - film/paper - processing - print characteristics 	<ul style="list-style-type: none"> - process color slide and negative film maintaining constant temperature and exact times - properly dry film, cut slides into frames and store negatives in envelopes - demonstrate the ability to use the color enlarger and filtration of colors to within .05 values - use the following equipment for the exposure of color prints to ensure of accurate, clear prints: <ul style="list-style-type: none"> - grain focus finder - negative cleaning agents - color analyzer - identify the differences between types of color prints - determine methods for processing color prints and correctly use methods, such as: <ul style="list-style-type: none"> - tray - tube - drum - Ektaflex processor - discuss print characteristics with attention to: <ul style="list-style-type: none"> - color tone - surface texture - contrast - color saturation - base type 		

TOPIC 2: PHOTOGRAPHY (COLOR) (continued)

IEVCP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none">- color correction- print exposure <p>5. Finishing:</p> <ul style="list-style-type: none">- permanency- print mounting- touch up	<ul style="list-style-type: none">- demonstrate the ability to use correction factors when printing- produce good prints through the use of:<ul style="list-style-type: none">- correct aperture and time- filtration controls- use appropriate techniques to control permanency of films, slides and prints- use low heat mounting process to mount prints- use color spotting dyes to correct spots on prints		

NOTES:

MODULE ELEVEN
MECHANICAL DRAFTING

INTRODUCTION

This module in drafting is designed to introduce the basic drawing concepts. Students will learn to draw objects using the various projection methods. It is important that students learn the correct use of the instruments.

OBJECTIVES

The objectives of the Mechanical Drafting module are to:

1. Provide a general introduction to the drafting field.
2. Acquaint the student with basic drafting tools, materials and procedures.
3. Develop an appreciation for the precise nature of communicating by the use of technical drawing.

LEARNING RESOURCES

*Stirling, N. Introduction to Technical Drawing, Gage Publishing Co. (Metric Edition) 1977.

Canadian Standards Association, Mechanical Drawing Standards, B78-1.

Giesecke, Frederick et al. Technical Drawing, Macmillan, 1967, 5th Ed.

Jensen and Mason, Drafting Fundamentals, McGraw-Hill Ryerson, 3rd Ed.

*Refers to prescribed resources.

TOPIC 1: DRAFTING

IEVMD

GENERALIZATION: Symbolic language is used universally by engineers, architects, builders, drafters and trades people to convey essential information about buildings and manufactured products.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none">- symbolic language- freehand drawing- lines- letters- symbols <p>2. Image Generation:</p> <ul style="list-style-type: none">- tools and equipment	<p>The student will:</p> <ul style="list-style-type: none">- describe where this language of industry is more efficient and effective than the written or oral language- explain the basic technique used for representing objects with freehand sketches- describe the correct line weights for different parts of drawings- discuss the different lettering styles commonly used on draftings- discuss the appropriate line symbols used on draftings and sketches- identify and describe how to care for various tools and drafting equipment, such as:<ul style="list-style-type: none">- scales- rules- pencils- set squares- parallel rules or T-squares- drafting machines- compasses and dividers		

NOTES:

TOPIC 1: DRAFTING (continued)

IEVMD

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
- shapes	- use various drafting instruments and drafting procedures to construct: <ul style="list-style-type: none">- horizontal lines- vertical lines- slant lines- parallel lines- geometric shapes- tangent arcs to lines- tangent arcs to arcs or circles		
- scales	- discuss the use of scales in drafting and produce a number of objects drawn to scale		
- orthographic multiview projection	- describe the use of projectors when constructing orthographic projections		
	- explain the relationship of the different views in orthographic projection (third angle)		
	- describe object lines and hidden lines		
	- produce a number of orthographic multiview drawings of various objects		
- isometric projections	- discuss the use of isometric projection in drafting		
	- produce a number of pictorial drawings of various objects in isometric projection		
- perspective	- discuss the use of perspective drawings in drafting objects		

NOTES:

TOPIC 1: DRAFTING (continued)

IEVMD

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none">- oblique- dimensioning- lettering	<ul style="list-style-type: none">- draw simple objects in perspective using one and two vanishing points- explain the difference between isometric drawing and oblique drawing- draw simple objects in oblique- dimension a variety of shapes and drawings using acceptable dimensioning practices- letter freehand, and with instruments or guides, notes, specifications, title blocks and exercises using acceptable lettering styles		

NOTES:

MODULE TWELVE
CUSTOMER SERVICE

INTRODUCTION

This module is designed to introduce students to the organizational structure of industry, production process and the various problems encountered in producing a saleable product.

OBJECTIVES

The objective of the Customer Service module is to:

1. Give the student a basic understanding of printing processes as they apply to producing a saleable product.

TOPIC 1: SAFETY

IEVCS

GENERALIZATION: The practice of safety is essential in all laboratory activities.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Safe Operation of Tools and Equipment</p> <p>2. Unsafe Acts and Unsafe Conditions</p> <p>3. Accident Reports</p> <p>4. Compensation</p> <p>5. First Aid</p> <p>6. Safety Program</p>	<p>The student will:</p> <ul style="list-style-type: none"> - use safely tools and equipment such as: <ul style="list-style-type: none"> - hand tools - lighting equipment - platemaking or screen - exposure equipment - fire extinguishers - discuss the hazards associated with: <ul style="list-style-type: none"> - solvents - chemicals used in processing photographic stencils - inks - cleaning agents - use correct protective equipment at all times, such as: <ul style="list-style-type: none"> - gloves - aprons - explain the purpose and use of accident report forms and report all accidents - explain the benefits available under the Workers' Compensation Act - attend to all minor injuries and practise minor first aid - participate in the prescribed safety program of the lab and/or school system 		

NOTES:

TOPIC 2: CUSTOMER SERVICE

IEVCS

GENERALIZATION: The industrial process of producing graphic commodities can be simulated readily in the visual communications laboratory.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Job Analysis:</p> <ul style="list-style-type: none">- methods <p>2. Personnel Organization:</p> <ul style="list-style-type: none">- management structure <p>3. Production</p> <p>4. Monitoring</p>	<p>The student will:</p> <ul style="list-style-type: none">- select the correct process for the customer requests- prepare cost estimation for specific products- establish a hierarchal organization for the production of a commodity with attention to:<ul style="list-style-type: none">- line- staff- analyze the production of a customer requested product and specify tasks according to:<ul style="list-style-type: none">- composition- design- layout- process camera:<ul style="list-style-type: none">- line- screen- black and white photography- color photography- paste up- press operation- collation- bindery- finishing- during the production processes the following should be monitored and recommendations suggested to improve the operation:<ul style="list-style-type: none">- quality control- personnel placement- production efficiency		

MODULE THIRTEEN
OFFSET PRINTING PRODUCTION

INTRODUCTION

This module is designed to introduce students to the processes involved in production of materials by means of offset printing. Students plan production in terms of a simple systems analysis, establishing time factors and deadlines for each step. Prime factors for evaluation are quality control, deadlines, wastage and consumer acceptance.

N.B. The modules, Introduction to Offset Lithography and Process Photography - Line are prerequisites to this module.

OBJECTIVES

The objectives of the Offset Printing Production module are to:

1. Introduce the student to the complexities of a production line.
2. Introduce the student to the docket system of orderly production and to the cost factors involved in production.
3. Instill in the student a feeling for craftsmanship and pride in the finished product.

LEARNING RESOURCES

*Cogoli, John E., Photo Offset Fundamentals, (Third Edition),
Van Nostrand Reinhold.

Adams, Julian and Kenneth Strattan, Press Time, Prentice Hall Inc.

Haulnstein, A., Dean and Steven A. Bachmeyer, World of Communications,
McKnight Publishing Co.

Hird, K.F. Understanding Graphic Arts, Gage Publishing Co.

*Refers to prescribed resources.

TOPIC 1: THE JOURNALISM PROCESS

IEVOP

GENERALIZATION: Conceptual ideas may be converted into symbols, words and pictures for fast, efficient and economic reproduction as a magazine or newspaper.

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<p>1. Image Creation:</p> <ul style="list-style-type: none">- design- creative and news writing <p>2. Production Techniques:</p> <ul style="list-style-type: none">- system analysis- docket system- hierarchy of management	<p>The student will:</p> <ul style="list-style-type: none">- incorporate principles and elements of design in the preparation of reports and advertizing for a publication- discuss the following terms as they relate to journalism:<ul style="list-style-type: none">- English for printers- news writing- editorials- discuss the differences between newspapers and news magazines- set up a systems analysis chart and indicate the Critical Path- establish a docket system for work- organize work stations for production- assign titles and jobs- establish deadlines- work out costs for various components of production		

NOTES:

TOPIC 1: THE JOURNALISM PROCESS (continued)

IEVOP

CONCEPTS/SUBCONCEPTS	LEARNING TASKS	HOURS	REFERENCES
<ul style="list-style-type: none"> - quality control 	<ul style="list-style-type: none"> - establish criteria for evaluating product 		
3. Image Generation	<ul style="list-style-type: none"> - discuss the layout appropriate for the following: <ul style="list-style-type: none"> - newspaper - news magazine - a section of a yearbook - booklet - other - use the available tools, equipment and processes to complete a layout for one of the above products. Use the point system of measurement 		
4. Image Conversion:			
<ul style="list-style-type: none"> - line and halftone 	<ul style="list-style-type: none"> - review the operating procedure for the process camera and use the process camera in the production of line, halftone and color separations 		
<ul style="list-style-type: none"> - flats 	<ul style="list-style-type: none"> - review the preparation of flats and prepare flats for the project in production 		
<ul style="list-style-type: none"> - platemaking 	<ul style="list-style-type: none"> - review the platemaking process and expose and develop plates for the product 		
5. Reproduction			
<ul style="list-style-type: none"> - offset 	<ul style="list-style-type: none"> - review the operation of the offset and use the offset in the reproduction of the product 		
6. Binding	<ul style="list-style-type: none"> - review the binding processes and use the appropriate process to bind the completed product 		

NOTES:

GENERAL

1. Research Module

The purpose of the Research Module is to allow individual students to engage in an in-depth study of a problem related to any of the career fields.

The time period is 25 hours and qualifies as a regular module.

The module provides for individualizing the program to allow for special interests of students. The student should prepare a proposal of his/her research and have it approved by the teacher. The proposal should contain:

- a) A statement of the problem.
- b) The procedure to be followed in the research of the problem.
- c) A list of the materials and lab facilities to be used.
- d) A time line of activities.

2. Developmental Module

The purpose of the Developmental Module is to provide a 25-hour block of time for the teacher to try out new content with his/her class. The content of the proposal or project should be discussed with the Associate Director of Curriculum for the Practical Arts.

3. Production Science Module

The purpose of Production Science is to provide for a class project in setting up a company to produce a product or service.

The Production Science 30 course will provide an outline from which content may be selected to develop a 25-hour module. The Production Science 30 is a full 4-5 credit course so the teacher must be selective in choosing the content for a module.

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